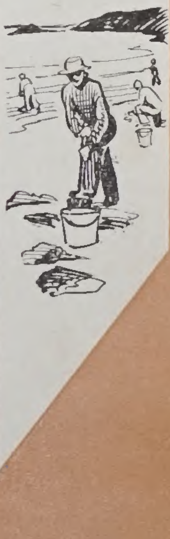
# ASTORIA

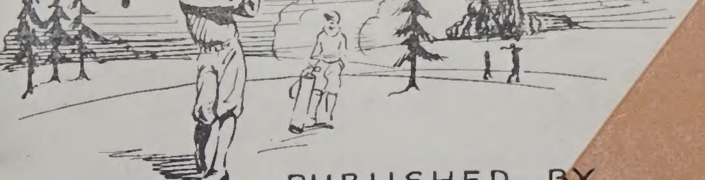
(Where the Columbia meets the Pacific)

and

# CLATSOP BEACHES

(On the Roosevelt Highway)





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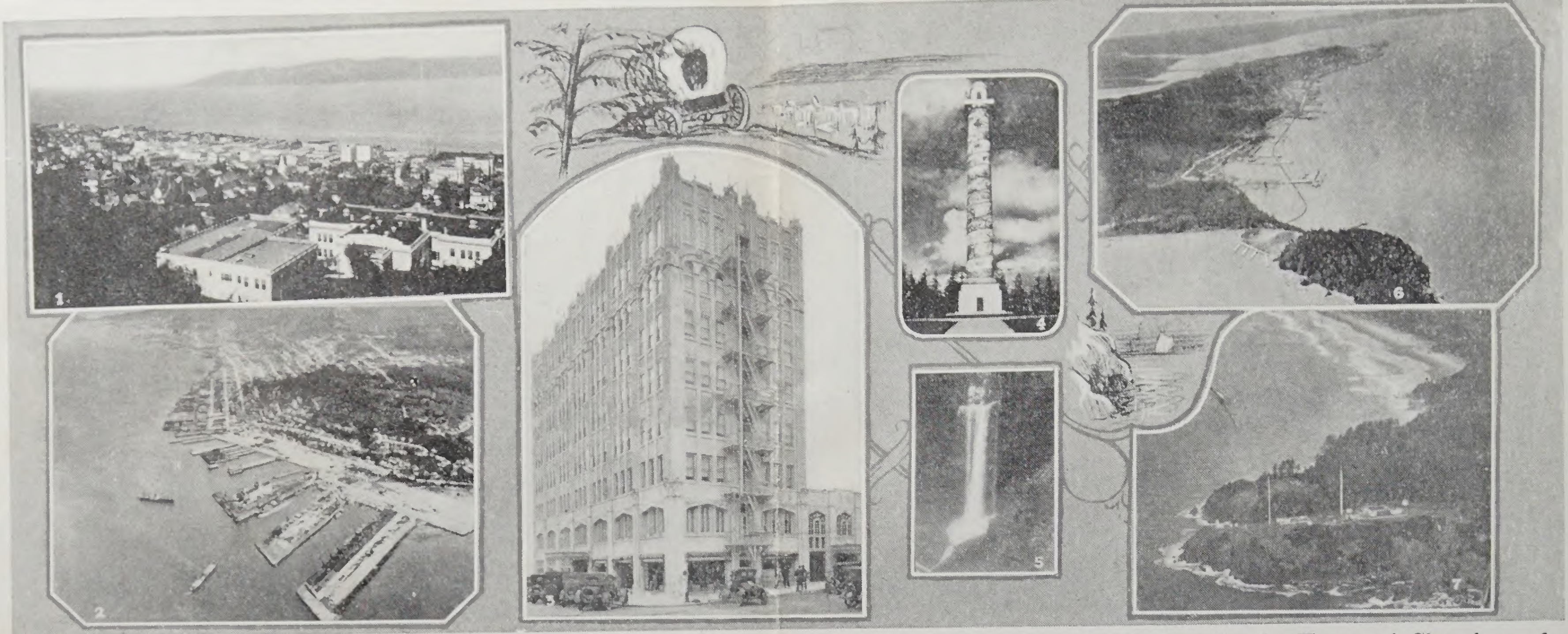
Astoria Chamber of Commerce



(1) Astoria and Columbia harbor (2) Astoria waterfront and Port of Astoria Terminals (3) Modern Hotel (Home of Chamber of Commerce) (4) Historic Astoria Column (5) Youngs River Falls (6) Tongue Point Naval Base (7) Forts at mouth of Columbia overlook the Pacific.

## ASTORIA

Astoria is located at the mouth of the Columbia river ten miles from the Pacific ocean. The Columbia river is the dividing line between Oregon and Washington.

Astoria is at the junction of Federal Highway 101 (The Roosevelt Highway) and the Columbia River Highway. Both of these famous highways terminate at Astoria.

### FERRIES

Two modern commodious ferries connect Astoria with southwestern Washington. The Astoria North Beach Ferry connects with Point Ellice and the Union Pacific Ferry with Megler, Washington. Each ferry has a capacity of more than two hundred passengers and twenty cars. Equipment includes lounge rooms, cafes, heat, light and radios. Frequent schedules. Forty minutes crossing time.

Spokane, Portland and Seattle railroad furnishes frequent train and bus service to Portland. Harkins Navigation Company maintains schedule of modern commodious passenger boats from Astoria to Portland. Ticket includes berth.

Freight, bus and passenger lines operate between Astoria, Seaside, various lumber camps, Tillamook and way points and, of course, between Astoria and Portland. Astoria is 105 miles from Portland.

### Proposed Trans-Columbia Bridge.

In process of development is the Astoria-Ilwaco peninsula trans-Columbia bridge. This structure will extend from within the corporate limits of Astoria to Point Ellice, Washington. It will connect the Roosevelt Coast Highway with the highways in Washington leading to Aberdeen, Hoquiam and Victoria and Vancouver, B. C.

A span 205 feet high and 1150 feet wide will traverse the main Columbia river shipping channel with a 50 foot viaduct across the shallow water to the Washington shore. It is estimated that the bridge will cost $5,500,000. The distance is four miles.

## HISTORICAL

Columbia River—Discovered May 12, 1792, by Captain Robert Gray and named for his ship "Columbia."

Lewis and Clark—Explored Lower Columbia River, built Fort Clatsop near Astoria and wintered there in 1805-06. Lewis and Clark river on bank of which Fort Clatsop was erected, was named for the explorers.

Astor Expedition—Astoria was founded in 1811 by the John Jacob Astor expeditionary parties. During the war of 1812 Fort Astor was taken by the British and named Fort George but was again reclaimed by the United States under treaty of Ghent fixing the boundary lines between Canada and the U. S. A.

Astoria is the oldest American city west of the rocky mountains. It was the goal of both explorer and pioneer and on the shores of the Columbia which it overlooks are the last resting places of innumerable early intrepid adventurers. The record of two shipwrecks, etched by survivors into Shark Rock, is preserved by the City of Astoria.

Vincent Astor, great grandson of John Jacob Astor, and Ralph Budd, President of the Great Northern Railway, have perpetuated the history of Astoria by erecting the monolithic Astoria Column here. Etched thereon, as more fully illustrated elsewhere in this booklet, is a comprehensive pictorial record of the discovery of the Columbia and of later explorations of the region.

### HISTORICALLY FAMOUS SPOTS

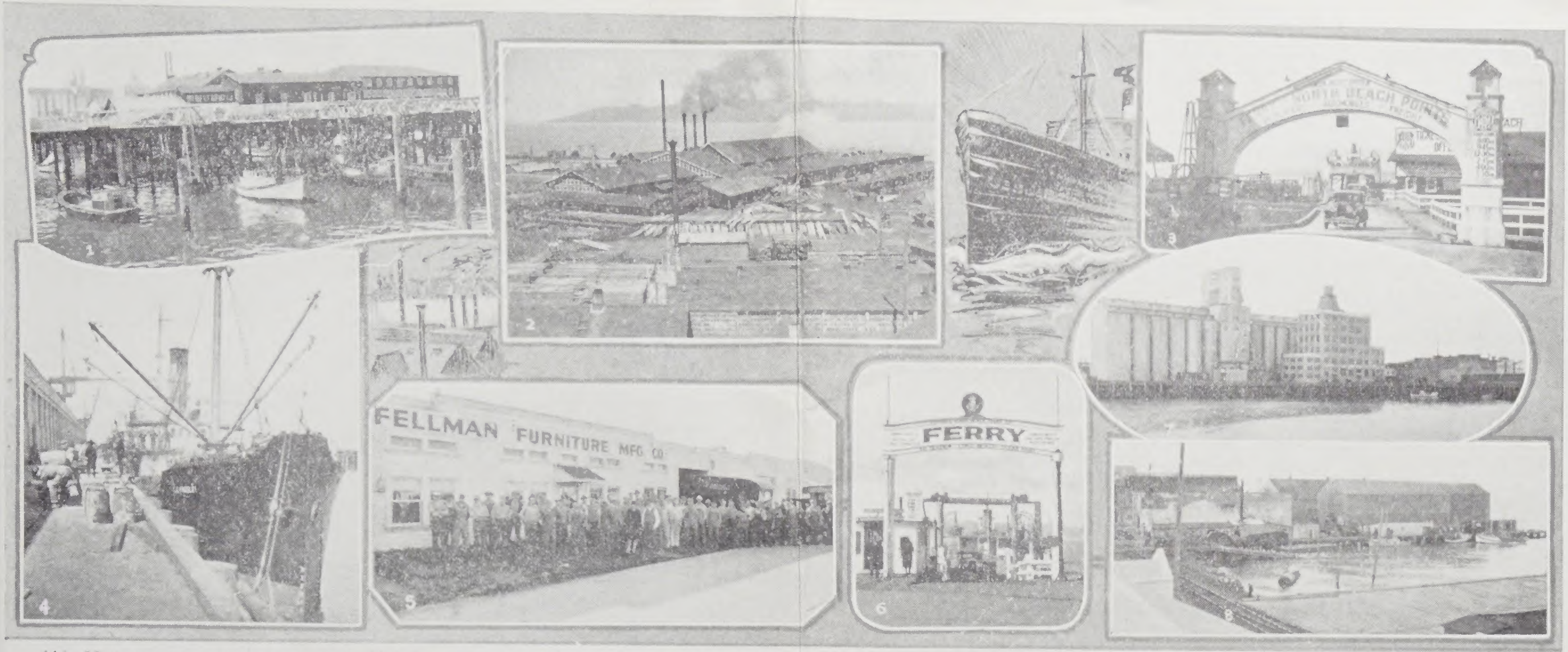
**Astoria City Park.** Replica of old Fort Astor, scene of first white settlement west of the Rocky Mountains.

**Fort Astor.** (Actual Site) Corner of 15th and Exchange streets.

**Astoria Column.** Dedicated July 22, 1926, by the Columbia River Historical Expedition, consisting of three special trains carrying historians, college and university leaders, statesmen and financiers over the route of Lewis and Clark.

**Fort Clatsop.** Where Lewis and Clark wintered during 1805-06. On the banks of the Lewis and Clark River one mile from the Roosevelt Highway and five miles west of Astoria.

**Lewis and Clark Salt Cairn** at Seaside, 20 miles from Astoria. It was here that Lewis and Clark boiled sea water to secure salt for their expedition.



(1) Net-racks, cannery and fishing boats (2) Astoria saw mill and box factory (3) Ferry to Megler (4) loading cargo, Port of Astoria (5) A Growing Industry (6)Ferry to Pt. Ellice (7) Grain elevator and Flouring Mill at Port of Astoria (8)Cannery where Royal King Chinook is packed.

## SHIPPING

Cost of Port Terminals—$4,000,000

Pier 1—620 by 1363 feet, berthage space 1725 lin. feet, minimum water depth 35 feet. Bulk grain elevator 1,250,000 bushels capacity. Flouring mills on this pier manufacturers 4000 barrels daily.

Pier 11—425 by 1445 feet, berthing space 3178 lin. feet. For lumber, 3000 ton coal bunkers, 20,000 tons fuel space and 20 to 50 ton capacity travelling cranes.

Pier III—550 by 1750 feet, berthage space 3875 lin. feet, warehouse 160 by 1550 feet, storage capacity 60,800 tons. Electric cargo cranes.

Industrial sites available. All served by belt line railroad.

Oil distributing concerns have their storage plants on port and nearby water front property.

| | Tons Handled | No of Vessels Calling |
|---|---|---|
| 1921 | 125,821 | 150 |
| 1928 | 386,795 | 955 |

**Value of Imports**

| | | | |
|---|---|---|---|
| From foreign ports | 4,191 tons | Valued at | $ 761,111 |
| From domestic ports | 71,404 tons | Valued at | 1,861,523 |
| Total Imports | | | $2,622,634 |

**Value of Exports**

1923 ........ $5,700,614.00 1928 ........ $16,631,503.00

Pilotage—Entrance pilots equipped with efficient pilot schooner. Pilotage however is not compulsory.

Coal—23,000 ton storage capacity and gravity discharge to ship's bunkers.

Freight Rates—Common transcontinental with other Pacific ports.

Steamship Service—Astoria is on regular call routes of intercoastal, trans-Atlantic and Pacific service.

Port equipment is modern and sufficiently adequate to handle all cargoes economically and efficiently.

Port property, free from taxation for industrial use.

## FISHING

Astoria is the world's Chinook salmon packing capitol and Royal Chinook salmon is the King of all fish.

With twenty-two salmon packing and ten cold storage plants on the Columbia, five thousand fishermen and two thousand fishing crafts, Astoria is the center of Oregon's third largest industry.

Salmon packing plants, open to the public from May until December, employ thousands of workers. Salmon are canned and cooked within a few hours after they are caught with perfect cleanliness and sanitary protection.

Columbia river fishermen are a rugged, picturesque, Scandinavian type who blend perfectly with both the practical and romantic phases of their perilous calling. Buffeted by fierce Pacific gales and treacherous river currents, these sons of the sea, nonchalantly pursue their craft with sheer indifference to dangers of storm and wave.

The taking of salmon, unlike the logging industry, does not reduce the resource of the industry. Through governmental and state propagation the salmon of the Columbia river are increasing.

The average total yearly pack for the Columbia river is 500,000 cases with a value of $7,500,000. In 1929 and 1922 the average pack was 357,627 cases.

### TIMBER AND PULP WOOD

Astoria's location at the mouth of the Columbia river renders the timber of Clatsop and Columbia counties in Oregon and of Pacific and Wahkiakum counties in Washington naturally accessible.

Twenty billion feet of timber is available in the district in large and small tracts. Log rafts are assembled and can be purchased on the river at ruling prices.

Great forests of hemlock for export or local manufacture or utilization for pulp while yellow Douglas and red fir, cedar, airplane spruce, cedar, larch are yet available in adequate quantity for the logger or manufacturer. However, it must be emphasized that timber is being more closely held than in the past and those who would secure a future supply must act promptly. Banks, trust concerns and pulp and paper manufacturers are already accumulating holdings at a low market level.

## RECREATIONAL

**Fishing and Hunting.** Astoria is the meeting point for fishing and hunting parties with trout streams, bass and pike lakes; duck lakes, salmon streams and game acres within a short distance, over good roads. Trolling out over the Columbia river entrance is the sport of kings.

**Golf.** Three sporty golf courses are available within a half hour of Astoria.

**National Guard Encampment.** More than three thousand national guard troops participate each year during June in a spectacular Brigade Review and Combat Spectacle. Encampment is an interesting spectacle during two weeks each June, the public being welcome every day.

**Fishing Fleet - Canneries.** The fishing fleet—thousands of boats and nets carrying more thousands of fishermen dot the broad expanse of the Columbia each night with myriad bobbing lights. Visitors at the canneries in the morning and early afternoon are thrilled with the spectacle of tons of Royal Chinook being prepared for distribution throughout the world. Fishing season opens May 1st.

*A Wondrous Vacation Land*

**Forts - Life Saving Stations and Seining Grounds.** Columbia Beach, only fifteen minutes drive from Astoria; life saving station at Hammond; Fort Stevens with coast artillery a mile further; life saving station at Cape Disappointment via ferry to Washington with Forts Columbia and Canby on the same trip; Tillamook lighthouse at Columbia river entrance and seining operations on Sand Island on Peacock Spit enroute.

**Lighthouse Service and Naval Base.** At the east end of Astoria. Opportunity to inspect range lights and whistling buoys.

Saddle Mountain and Tillamook Head are nearby peaks with wonderful views for hikers.

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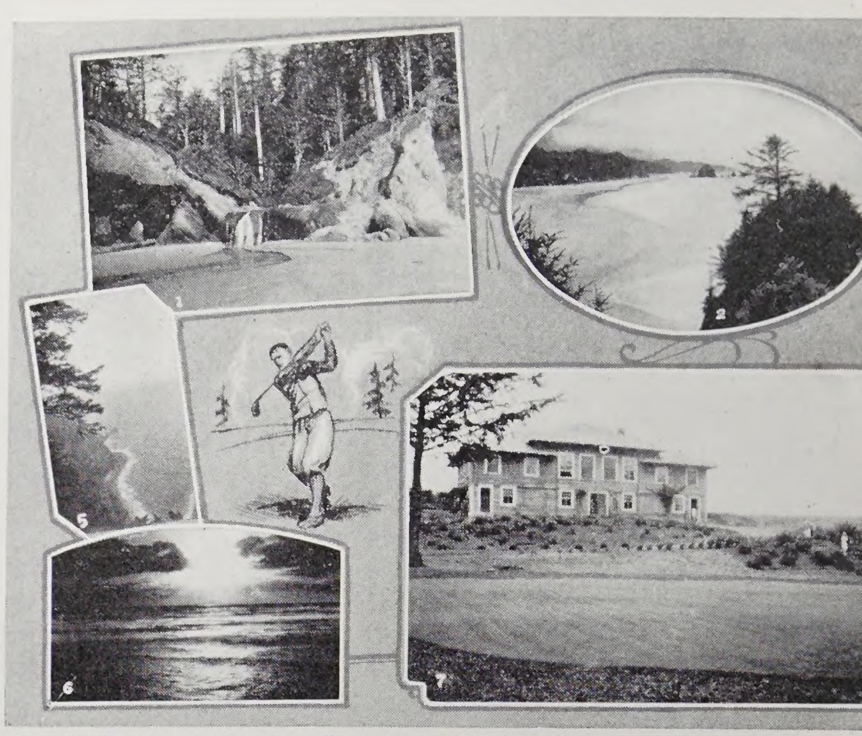
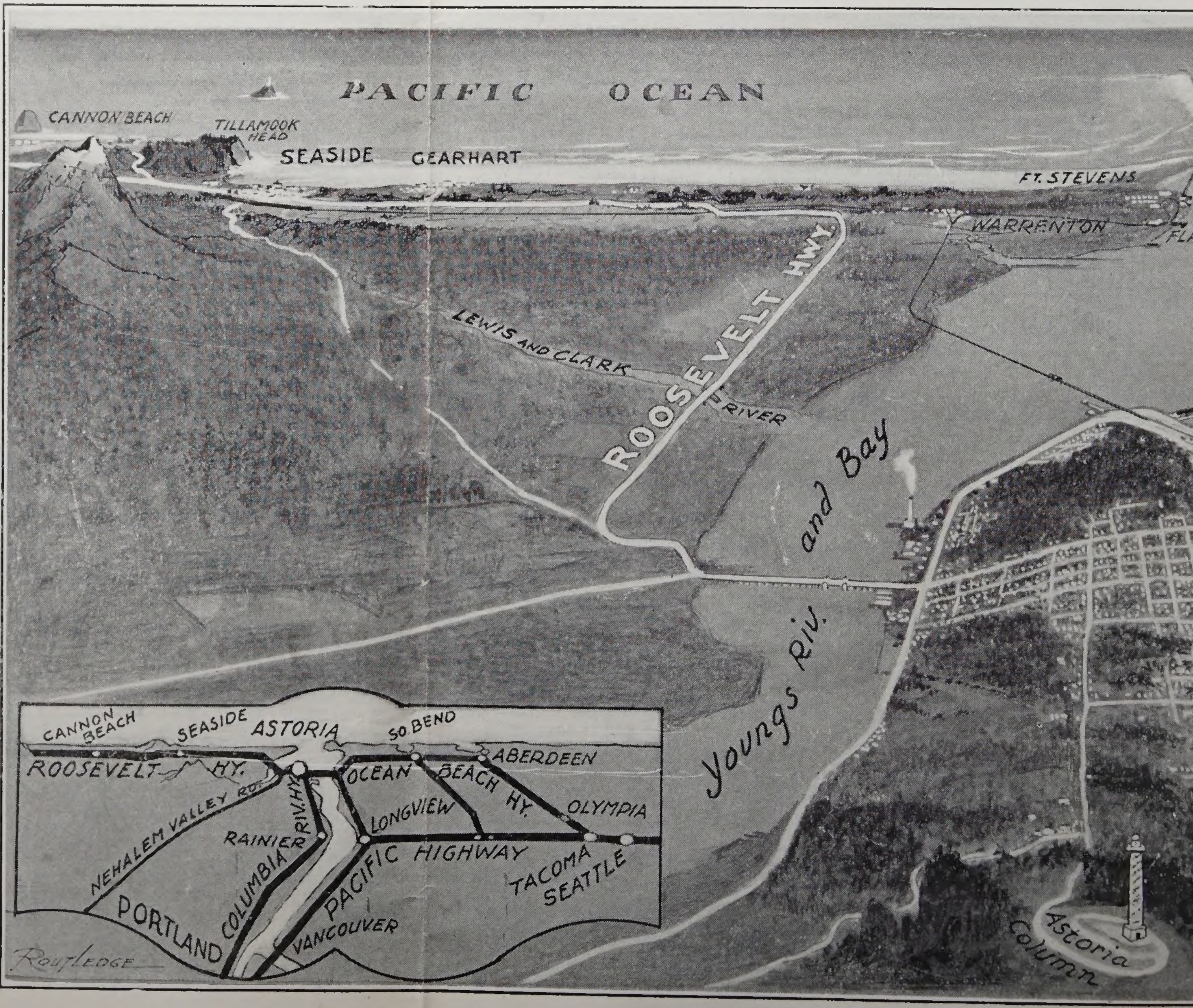
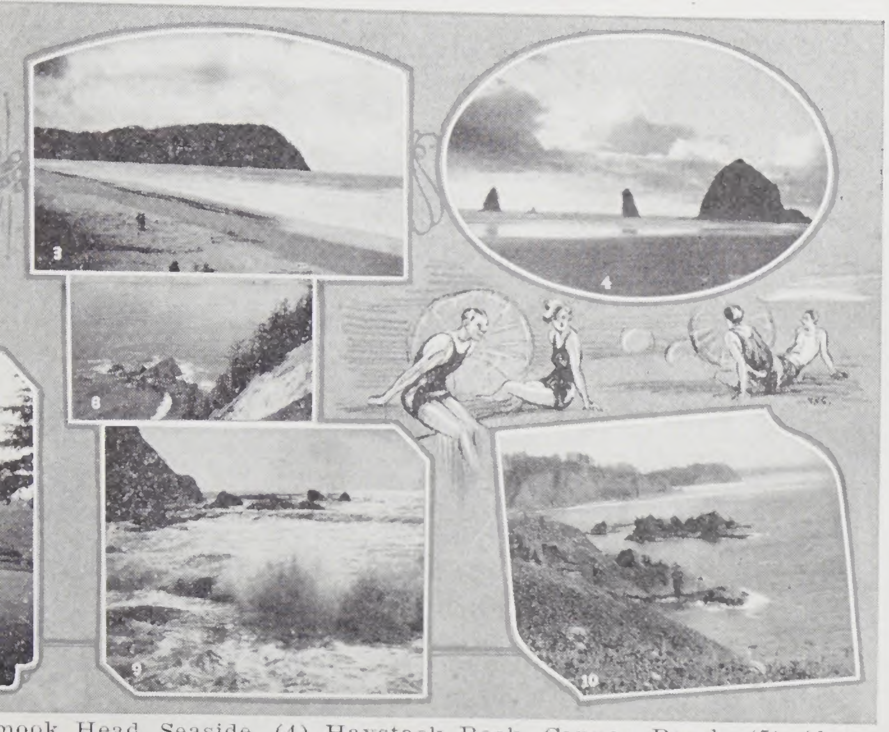
**Read of Early Astoria**
**in**
**Gray's - Oregon**
**History Hudson Bay**
**Co.**
**Irving's - Astoria**
**The Conquerors**
**Fur Traders of the**
**Northwest, Etc.**



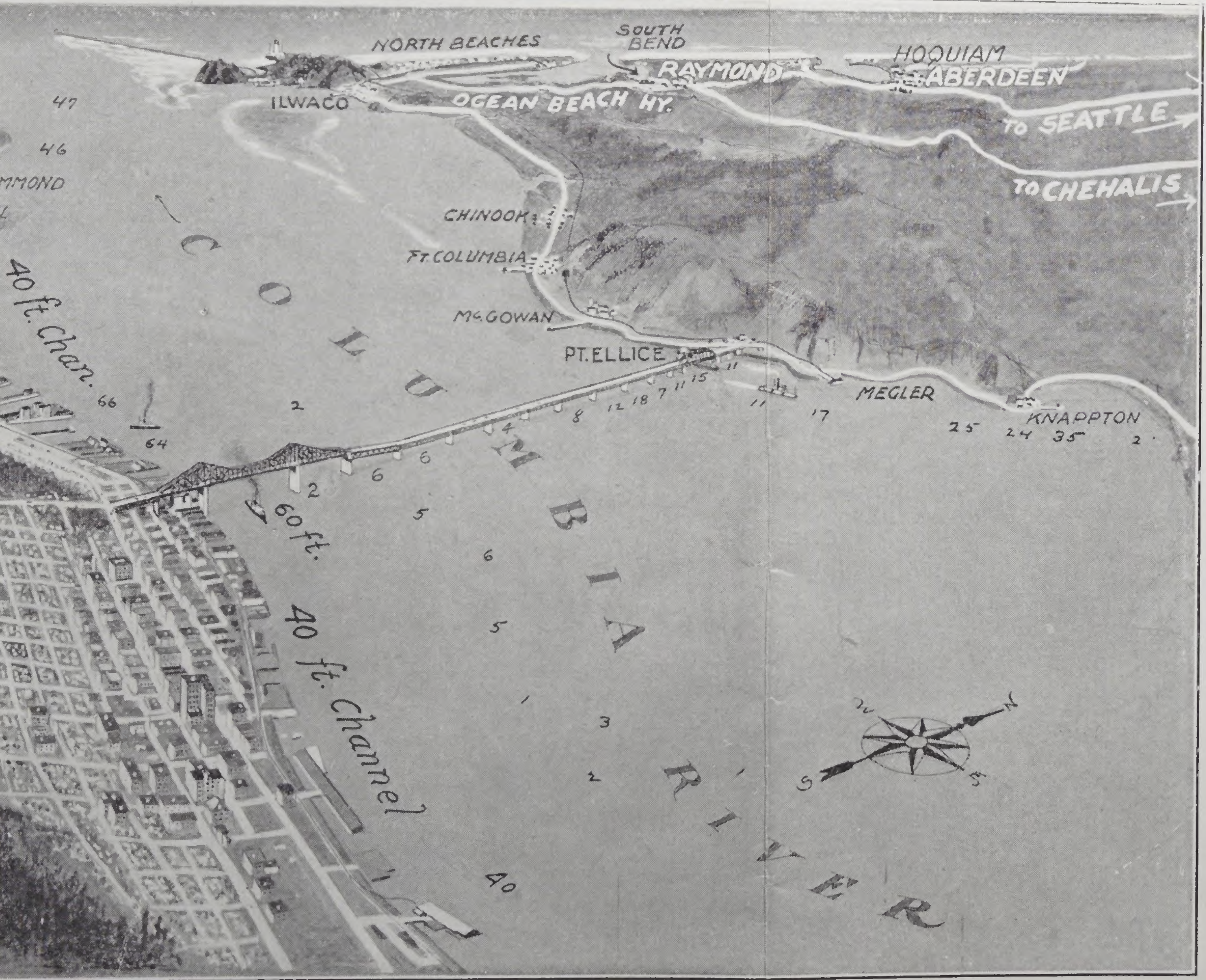
(1) Stream reaches the Sea (2) Hug Point, Cannon Beach (3) Ti
Roosevelt Highway (6) Mouth of Columbia (7) Putting Green,
season (10) Pacific's rock bound coast.



ASTORIA as it will appear when the



nook Head, Seaside (4) Haystack Rock, Cannon Beach (5) Along
toria Golf Club (8-9) Scenes on Roosevelt Highway during winter



toria Trans-Columbia Bridge is completed.

## FAMOUS BEACHES

**Seaside.** A metropolitan beach and summer resort with fine hotels, apartments and furnished cottages and auto camp service. Golf links, natatoriums, fishing pier, boating, bathing, claming, beach fires and social activity.

**Cannon Beach.** Most beautiful beach on the Pacific. Hotels, apartments, cottages, tents and auto parks. Adjacent streams, mountains and rugged shore line. Fine bathing beach, mussels, clams and quiet vacation life.

**Gearhart.** Hotels and furnished cottages, golf links, horseback riding, Y. W. C. A. summer camp; quiet and exclusive resort. Splendid bathing beach.

**Long Beach, Seaview, Ocean Park.** Reached by fast and modern ferries from Astoria. World's speedway, fishing rocks, clam canneries, golf, hotels, furnished cottages, tents and auto camps. Longest beach for motoring on the Pacific.

> *"Where rolls the Oregon and hears no sound save its own dashing"--Bryant*

### CLIMATE

The hottest day ever recorded in Astoria was 97 degrees.

The lowest temperature ever experienced in Astoria was 10 degrees above zero.

**Four Year Record**

| | Clear | Partly Cloudy | Cloudy |
|---|---|---|---|
| Astoria | 634 | 342 | 485 |
| Portland | 365 | 314 | 782 |
| Eugene | 522 | 357 | 582 |
| Salem | 622 | 304 | 533 |

Astoria has the lowest mean, maximum temperature of any city in Western Oregon, 58.9 degrees.

It has the highest mean minimum temperature of any city in Western Oregon, 45.2 degrees.

There have been periods of as long as 716 days in which Astoria experienced no killing frost.

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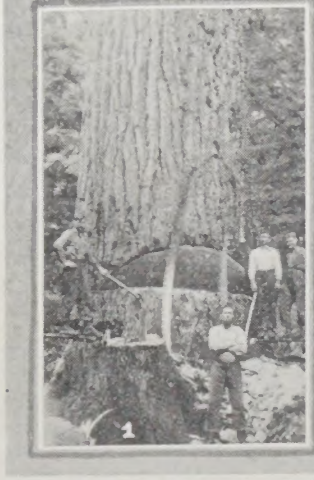
**Come to the mouth of the shining and surging Columbia for your holiday trip.**

**Make Astoria your headquarters and then visit all the historic and play-spots shown on the map at the left.**



(1) Big Timber (2) Salmon Cannery operations interest visitors (3) Seining on the islands of the Columbia gives employment to college students (4) Logging operations in the Astoria district are conducted on a huge scale.

## INDUSTRIAL

**Furniture Manufacturing**—With alder and other similar woods available in great quantities in this district, furniture manufacturing is forging ahead rapidly, and there is sufficient raw material for several more plants. The existing plant has been forced to decline hundreds of thousands of dollars worth of orders. Hardwoods are shipped to available factory sites by boat.

Available spruce timber should attract those interested in rotary cut veneer manufacturing for boxes, baskets and panels.

Attractive proposals and surveys will be prepared for interested persons.

**Vegetable and Berry Packing**—Raw material for vegetable and berry packing is available in the lower Columbia river district. Peas, beans, cauliflower and other vegetables of the highest grade can be contracted. Wild grown berries are now furnishing raw material for two small plants with the potential supply adequate for a large pack.

**Pulp Mill Facilities**—A complete setup for the manufacture of pulp and paper is available for development including unlimited quantities of pulp wood, water supply and sites.

**Lumber and Wood Manufacturing**—Astoria is close to the center of the log assemblying points on the Columbia river, has $20,000,000,000 of timber adjacent and ideal locations for saw mills and wood working plants.

**Manufacturing**—Astoria has buildings already constructed that would be ideal for the manufacturing of any article sold to the Pacific coast trade.

The Astoria Flouring Mills Company has a 5200 barrel per day capacity at its mill at the Port of Astoria. Connecting with the flouring mill is an immense grain elevator with a capacity of 1,250,000 bushels of bulk grain.

Astoria enjoys regular freight service by water to all coast, intercoastal and foreign ports and railroad terminal rates to and from middle west and eastern points.

### CIVIC

**Service Clubs**—Gyro meets Tuesday; Rotary, Wednesday Kiwanis, Thursday.

## STATISTICAL

Population of Astoria—16,000.

Population of Clatsop County—26,750.

Population Astoria's trade territory—75,000.

Summer population Astoria's trade territory (estimated)—125,000.

Payroll, 7000 employed (including fishermen)—$5,500,000.

Bank Deposits—$6,000,000. Postal Savings—$800,000 (20th in U. S. A.)

Timber—Twenty billion feet. One-fifth of all the timber in Oregon is in Clatsop County.

Manufacturing—Manufactured products of this district exceed $10,000,000 in value and include Salmon, flour, fertilizer, mill feed, furniture, butter, canned fruits, cigars, boats candy salmon eggs.

| | Per Annum |
|---|---|
| Salmon industry closely approximates | $7,500,000.00 |
| Dairy industry closely approximates | 1,850,000.00 |
| Poultry industry closely approximates | 350,000.00 |
| Miscel. Crops closely approximates | 425,000.00 |
| Postal Receipts 1928 | 68,202.74 |
| Acres in farms in County | 53,250 |
| Value of farms in County | $6,567,279.00 |

**Astoria Harbor**—10 miles from open sea. Depth 48 feet for width of 1200 feet. Depth 45 feet for width of 200 feet. Depth over 42 feet for width o 6000 eet. Anchorage space 12 square miles with depth of from 24 to 70 feet. Wharves and piers have aggregate berthing space of 12,750 lin. feet.

**Fraternal**—Splendid buildings and meeting places maintained by Elks, Masonic bodies, Odd Fellows and labor organizations, Y. M. C. A., Y. W. C. A.; while the American Legion, Finnish Brotherhood, Sons and Daughters of Norway and Swedish societies and other societies maintain active organizations Garden Club and Business & Professional Women's Club.

**Churches**—All denominations, ably directed, large congregations with commodious buildings.

**Press**—English, "Morning Astorian," "Astoria Evening Budget;" Finnish, "Lannen Suomatar," and "Toveri,"

(1) Dairy barn (2) Picking Cranberries (3) Dairy herd near paved highways (4) Creamery (5) 1000 Hens equals Independence (6) Tideland (7) Creamery (8) Silo and herd near Astoria.

## DAIRYING

You are a farmer of only moderate means? Then Clatsop offers the same agricultural opportunity as any rich coastal country in a region where land is yet cheap but where transportation and cooperation has made the markets the best.

It is to the humble farmer, the home-seeker. that Clatsop county has its greatest appeal. As a land just coming into its agricultural development, it offers the shining chance of "growing up with the country."

The poultryman in particular has a sterling opportunity. As has been said, cut-over hill land unsurpassed for egg production and near good highways can be secured for $20 an acre and up.

The man with next to nothing can establish himself upon rich diked tideland. Ten years ago William de Jong came with his family to Brownsmead, a district of recleamed tideland near Astoria. He had $35 in the world. Today he is one of the outstanding successful farmers of Clatsop county. His children have been educated in college. His farm is equipped with every modern appliance and device.

While dairying is practised with rich returns in all parts of Clatsop county, it reaches its acme on the deep, rich alluvial tidelands along the Columbia river and its tidal tributaries.

The richness of the tidelands provide a vast abundance of succulent feed. Production of roots, hay and ensilage reaches heavy averages. Two crops of hay are cut.

Roots are grown universally. Rutabagas and mangels have a prominent place on every farm in the county.

Through the evercise of cream grading, Astoria plants have found it possible to pay the dairymen well above the state's ruling market price for his butterfat. This premium is never-failing and averaged four cents per pound of butterfat.

## POULTRY

Of all the agricultural enterprises of Clatsop county, poultry production is the most attractive to the man of moderate capital. The initial investment is slight, and the return is sure for the poultryman who will work and who has had experience or will follow the trail blazed by hundreds of successful poultry growers who will be his neighbors.

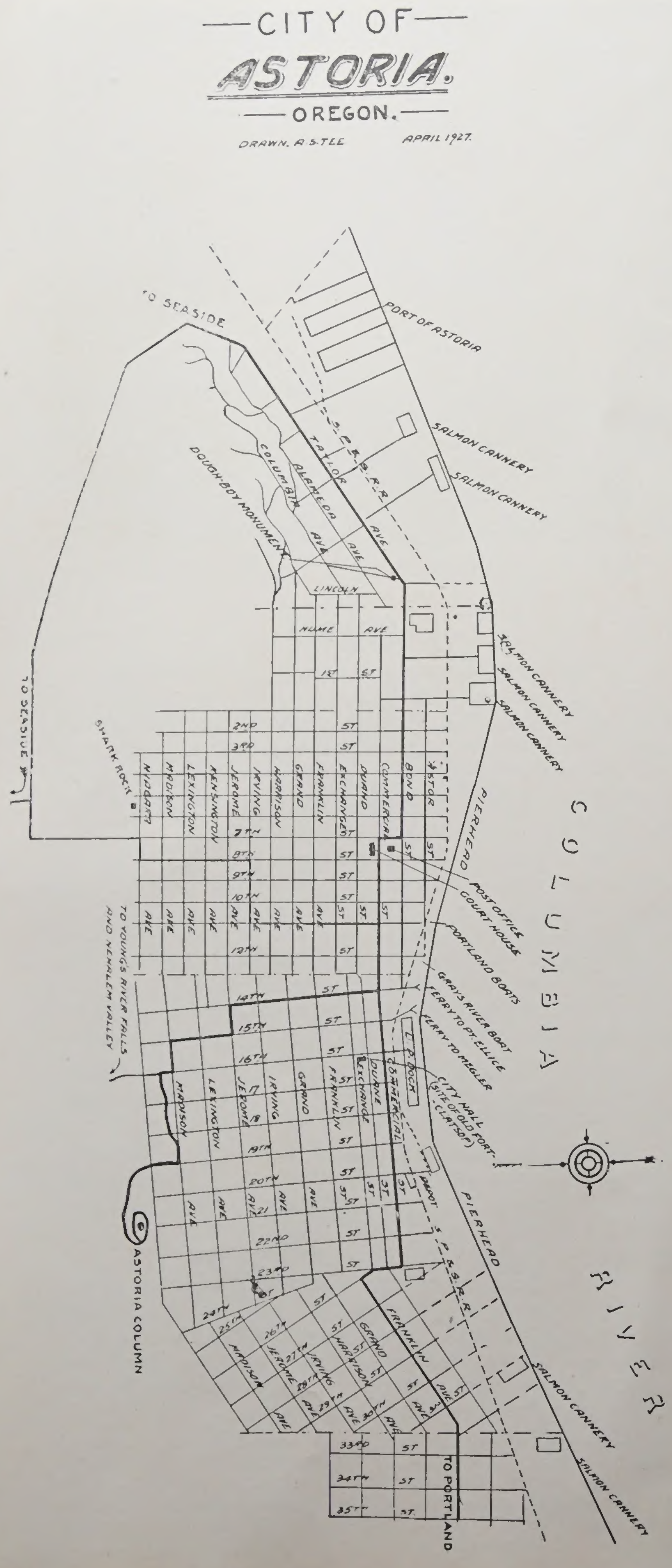
The market for Clatsop county eggs is unlimited. It has been made so through the entrance of many of the larger egg-producers into one of the big northwest cooperative marketing organization, which opens to them all of America as a market and uniformly brings a higher average return than individual marketing. Eggs are shipped in carloads from the Clatsop county egg farms to New York City where they command the highest price.

The mild summers at the same time are favorable to egg-laying, the hottest summer weather having practically no effect upon the product of the flocks.

In the five years the number of hens in commercial flocks in Clatsop county multiplied nine times and the progress is continuing steadily. The peak of favorable production is nowhere yet in sight and the prosperity of the poultrymen increases as their numbers grow.

Poultry have proved a tremendous asset to scores of Clatsop ranchers. Peter DeWelt came to the Clatsop Plains district a few years ago with little. A man past middle age, he was faced with a real problem. He turned poultryman and today is prosperous, with two fine ranches and all that an elderly man might wish.

John Lahti was a logger. He owned a few acres of logged-off land on which his family lived while he worked in the camps. Tiring of the forests, he turned to his hill ranch and chickens. In five years he rose to affluence and a position as one o the outstanding poultry successes of Oregon.



# TOURIST INFORMATION

**Motor Trips**—Columbia River Highway to Portland; Roosevelt Highway to Seaside, Gearhart, Cannon Beach, Mohler, Wheeler, Bay City, Tillamook, Neskowin, DeLake, Taft and Newport. Cross the Columbia via ferry to Chinook, Ilwaco, Seaview, Long Beach, Ocean Park (World's Speedway), South Bend and Raymond. (Ferry at Tokeland to road to Aberdeen), Raymond to Chehalis and Pacific Highway.

Paved to Fort Stevens and Point Adams Life Saving Station; paved to Fish Hatcheries (one on Youngs River and one four miles past Seaside); loop trip back along Lewis and Clark River to Roosevelt Highway; trip into Nehalem valley, Jewell (B-W Logging Camp), Birkenfeld, Vernonia, back to Clatskanie on Lower Columbia River Highway.

**Auto Park Camps**—At east end of Warrenton cut-off (7.1 mi.); west end of cut-off (8.2 mi.) Columbia Beach (8.9 mi.); Seaside, near depot; Cannon Beach and at resorts from Manzanita Beach to Newport.

**Crabs, Clams, Mussels, Etc.**—Found at all beaches in season, mussels at Cannon Beach.

**Mountain Climbing, Hiking**—Saddle Mountain, Tillamook Head, etc.

**Fishing**—Trout on upper Lewis and Clark and Youngs Rivers, Necanicum, all forks of Nehalem, Bear River, John Day River, Deep River, etc. Salmon in season on lower sections of those streams.

**Salmon Trolling**—Arrangements can be made for salmon trolling trips on the Columbia by making application at the Chamber of Commerce.

**Fishing Bass**—Lakes on Clatsop Plains.

**Hotels**—Modern year-round at Astoria, Gearhart, Seaside, Cannon Beach and at points between Astoria and Newport.

**Distances From Astoria**—Ashland, 429; Albany, 183; Portland, 105; Bend, 340; Clatskanie, 40; Corvallis, 191; Crater Lake, 496; Eugene, 229; Grants Pass, 383; Hood River, 171; Klamath Falls, 493; Medford, 416; Newport, 155; Ontario, 526; Pendleton, 336; Rainier, 58; Roseburg, 304; St. Helens, 76; Salem, 157; Seaside, 20; Tillamook, 78; Gearhart, 18; Warrenton, 8; Cannon Beach, 29; Seattle, 206; Tacoma, 165; Vancouver, B. C., 472; San Francisco, 823; Los Angeles 1280.

## CIVIC

**Government, City**—City manager form; port is governed by efficient Port Commission; Clatsop County by judge and commissioners pledged to business administration.

**Hospitals**—Two modern accredited. (Inspected.) Fine staffs of physicians and nurses.

**Water**—Pure from headwaters of Bear river. (Gravity System).

**Sewers**—Pipes 8 to 48 inches discharge in Columbia river.

**Schools**—Splendid buildings; efficient teaching staff; splendidly administered; elementary, junior high and high school system.

**Transportation**—(City) Modern bus service.

**Federal Building**—On preferred government list for $250,000 structure.

**Community Chest**—Established several years and successful.

**Music**—Several fine singing societies, uniformed band and American Legion Drum Corps.

## INDUSTRIAL

**Labor**—Plentiful and both men and women are efficient. No labor troubles.

**Working Conditions**—Climate renders working conditions ideal the year round. Mild rains do not interfere with work at any season.

**Opportunities**—Outstanding opportunities here for capital for pulp and paper and rotary cut veneer plant,

# ASTORIA

## *Center of the World's Salmon Packing Industry*

# Home of King Chinook

When Capt. Robert Gray discovered the Columbia river May 11th, 1792, he found the Chinook Indian tribe subsisting bountifully upon the peer of all salmon, Royal King Chinook, a fish destined to lead the fishing industry of the world for more than a century and provide epicureans with an unapproachable sea delicacy.

Fishing is Oregon's third largest industry.

Chinook Indians caught salmon with their hands, with wood spears, with rawhide dip nets and with a blow from a paddle or club. Equipment for garnering the finny horde is now revolutionized but the King still observes identically the same laws of habitat, mating and procreation as it did when the aborigine exerted his primitive wile to trap his meal from the million of Chinooks surging upriver to the spawning streams.

### Gillnetting at Night on the Columbia.

On nights, except Sundays, from May to January, thousands of fishermen in gillnet boats, drift back and forth on the Columbia directly opposite Astoria, the world's salmon center, playing out and hauling in their gillnets, returning at daybreak to the canneries or receiving stations to weigh their catch and claim repose from arduous and dangerous toil. They are the true sportsmen, these fishermen. They stake their investment in boats, nets, equipment and their very lives on the black expanse of the Columbia at night for the salmon they may net. Their wellbeing and that of their families depends not alone on their skill but is often determined by vagaries of nature which decide with abritrary finality that the season is or "is not a gillnet year." When it "is not a gillnet year" the majority of Columbia river fishermen lose their sportsmen's stake and often they start a new season burdened with debt from the old. When it is a gillnet year the businessmen and populace of Astoria and of the Lower Columbia share prosperity with the fishermen.

### At Home in Fishing Boats.

Fourteen thousand fishermen match guile with wile in garnering the weaving mass of Chinooks from the harbor of the Columbia. In nationality, Finnish predominate, Finnish, Swedish and Norwegians, mostly transplanted from the fjords and bays of the Scandinavian peninsula. A large percentage are now American citizens. Fine physical men are they with bronzed visage and eyes narrowed from long squinting at sun, moon and shimmering horizons. The Columbia is their field of labor, boat and net their tools and salmon their harvest. The Columbia river fishermen rides in his boat with unaffected nonchalance. He eats, reads and often sleeps there between the drifts of his net and the change of the tide.

### A MID-RIVER FISH FARM

Out in the middle of the Columbia, miles from either shore, communities of fishermen live a precariously marooned life during the seining season. Houses, barns and out-buildings perch fantastically upon twenty-foot piles and during the height of a flood tide the surge and swish of current, wave and wind emphasizes the illusion of a floating farm. In their stalls the scores of horses placidly munch their hay and dry their fetlocks, awaiting the change of tide which will again call them to the work of hauling in the seines through the surf which often enclose tons of Royal Chinooks. One story up is the cook house, dining hall and store house while on the third story is the men's bunk house and social club rooms. Here the men discard their waist-high waders and play at cards or relate the startling tales of the fisheries of Cape Cod, Alaska and of the Scandinavian peninsula. With the change of tide on go the waders and the huge nets are again laid out in a great circle from the sand bars. At the height of the season students from various northwest universities engage in seining operations and thousands of those young men have paid their college expenses through their earnings on a Columbia river fish farm.

All Pacific coast salmon are of the genus Oncorhynchus. They are not of the closely related genus Salmo, although the name is undoubtedly derived from that source. The species was made known by Stellar in 1731.

## SALMON ROYALTY

The largest, best known and most valuable of all salmon is Royal King Chinook, (O Tschawytscha). The genesis and home of the salmon is in the sea, perhaps along the coast line.

Nature demanding procreation calls annually to Chinooks to weave their weary way against hundreds of miles of current, over rocks, obstructions, waterfalls and dams, to the place of their nativity and the spawning grounds at the headwaters of the Columbia and Snake rivers. Famished from nature-imposed fasting great schools of weaving finny hordes struggle, leaping obstacles and against the current to keep rendezvous with their kind. The spawning salmon dies soon thereafter.

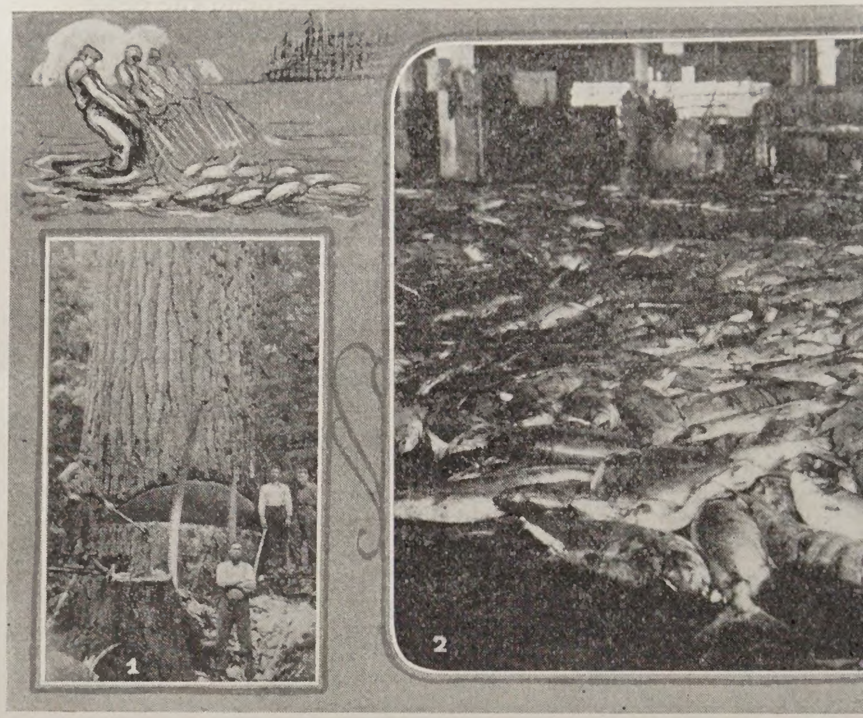
### Natural Propagation.

Within the shallow sandy depths of the fresh waters, the female salmon, with an almost incredible canniness, prepares a cache. Reclining upon one side, with a steady motion of her little body, she begins to scoop a crib or trough. When the crib or trough has been arranged to her own peculiar liking, the burden of spawn is deposited. It is at this point that her mate comes to her assistance. As soon as the female fish deposits her eggs, the male sheds a "milt" or so-called "soft roe" covering the spawn. Following this, with united effort the parent fish now takes the precaution to carefully cover their spawn with the sand and gravel of the stream chosen for their operations. With a swift motion of their bodies they heap sand and gravel over the deposit until it is safely covered. A female salmon will produce 900 eggs for each pound of her own flesh. The eggs are tough and measure about a quarter of an inch in diameter. The time required to hatch them varies, of course, with the temperature. Thus the period of incubation may be as short as seventy days, or as long as 150 days. The general rule, however, is that eggs deposited in the fall of the year are hatched the following spring.

## AN EIGHTY-SEVEN POUND CHINOOK

Along the Columbia and its tributary streams, the salmon attains a length of from four to five feet, weighing from twenty to eighty pounds. The largest salmon in the history of the Columbia river salmon industry was captured in the spring season of the year 1925, weighing eighty-seven pounds. Last August, the fishermen on Sand Island gathered the biggest catch of salmon in the history of the industry, showing conclusively that protective regulations maintained by the government and state in the matter of salmon conservation have not been in vain.

In the year covered by these statistics, there were operating in the salmon districts of Clatsop County, Oregon, alone, approximately twenty salmon canneries and ten cold storage plants, employing approximately 5000 men during the open seasons. A corps of so-called salmon butchers are retained by each packer throughout the entire year, during both open and closed season, regardless of the output.



(1) Big Timber. (2) Salmon Cannery operations interest visitors. (
students. (4) Logging operations in the Astoria district are conduc

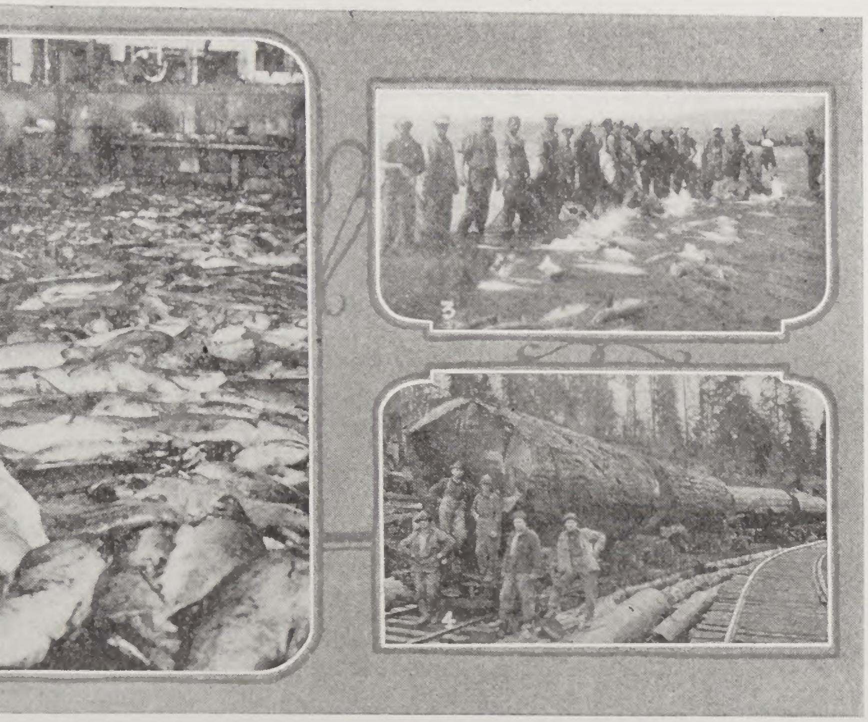
### Methods of Taking Salmon.

Every season in the salmon fishing business brings with it its own peculiar and sometimes spectacular method of hauling the fish from the deep. This, too, is due to various causes. Weather conditions, one of the outstanding causes, is more or less responsible for the annual change in the methods of luring the salmon from their lairs at the bottom of the deep. Rains, winds, high water, low water, all tend to create their own peculiar demands. Three methods, however, predominate. That is to say, certain conditions demand the use of the seine. Again, the fish may be trapped, whereas, on the other hand, the "gillnet" is often resorted to. The 1925 spring season was pre-eminently a "gillnett" season. The seine and traps predominated in the operations of 1924. More seining was resorted to during the 1927, 1928 and 1929 seasons.

The Columbia river has three runs, the first entering during January, February and March, and spawning mainly in the Clackamas and neighboring streams. The second, which is the best run, enters during May, June and part of July, spawning mainly in the headwaters. The third run occurs during late July, August, September and part of October, and spawns in the tributaries of the Lower Columbia.

The first American to engage in fishing on the Columbia river was Capt. Nathaniel J. Wyeth, of Massachusetts, who in 1832 crossed overland to Oregon with the purpose of establishing salmon fisheries in connection with prosecuting the Indian and fur trade. He dispatched a vessel via Cape Horn to the Columbia with trading goods, but she was never heard from after sailing.

George W. Hume was the first salmon canner to employ Chinese. He had a Chinese working for him and through this man secured a Chinese gang from Portland. This was at Eagle Cliff in 1872. At this period the white laborers in the



Seining on the islands of the Columbia gives employment to college
on a huge scale.

canneries were recruited from the riffraff and criminal element of Portland. Chinese labor proved so satisfactory that the custom soon spread to the other canneries. It was not found that the Chinese could do the work any better or quicker than the white laborer, but they proved more reliable in their work and gave less trouble.

### Shipping Fresh Salmon Direct to Consumer.

An important new feature in the salmon industry is the shipping of individual salmon direct to consumers by express or, for certain short distances, by parcel post, for a certain fixed sum, which includes the fish itself and the cost of delivering same to the buyer. The number of shippers has increased very much, and the business is now carried on from Astoria quite extensively. The Astoria Chamber of Commerce gladly cooperates in placing individual buyers in touch with reliable salmon dealers.

### Nutritive Qualities of Salmon.

More and more attention is being paid by the consuming public to the nutritive qualities of the food products offered them and this is especially true as regards fishery products

The proper functions of food are two-fold, first to furnish protein for building and repairing the body, and second, to supply energy for heat and muscular work. Foods which supply an abundance of both at a reasonable price are of the greatest importance from an economical standpoint and salmon is declared by physicians and dieticians to combine more of the health giving qualities than any other species of sea food.

### Sportsmen and Tourists.

Tourists and sportsmen will find an attractive lure in pursuing Royal Chinook salmon at the mouth of the Columbia. Arrangements can be made with the Astoria Chamber of Commerce and Astoria sporting goods houses for a trip with trollers out over the Columbia river entrance where the capture of a 50-pound Royal Chinook with light rod and tackle on the breast of the Pacific is the sport of kings. To those enured to hardship a trip with the gillnetters over night drifting up and down the broad expanse of the Columbia and hauling in King Chinook from the gillnet, will provide a thrill never to to be forgotten. A trip to Sand Island, Peacock Spit or McGregor Sands where large groups of college boys assist in handling the immense seine nets and where from a dozen to five dozen horses are required to pull in the hauls often reaching from five to six tons, gives a thrilling experience.

Fly casting and trolling in small boats on the Lewis and Clark, Youngs, Skipanon and Necanicum rivers, is a sport at which sportsmen find annual enjoyment.

## APPARATUS AND METHODS OF THE FISHERIES

### Gillnets.

The gillnet is the oldest and most popular form of apparatus in use in the salmon fisheries of the Pacific coast. There are two kinds, drift and set, these names clearly expressing the difference between them. Fine flax or linen twine is generally used in their manufacture, although in some places cotton twine is employed. It has usually 12 threads and is laid slack. They are hung in the ordinary manner—to a rope with cork floats to support the upper portion of the gear, and to a line with lead sinkers attached, which keeps the net vertical in the water and all its meshes properly distended. The nets are tanned, usually several times each season.

Drift nets vary greatly in length and depth, depending upon the width of the fishing channels, the depth of water, etc. On the coastal rivers of Oregon these nets average about 125 fathoms in length and are about 36 meshes in depth, the mesh varying with the species of salmon sought. On the Columbia river the nets average about 250 fathoms in length and have a stretch mesh for chinooks of 9 to 9½ inches.

### Haul Seines—Fishing with Horses.

On the Columbia river, where this form of apparatus plays a prominent part in the fisheries, the nets vary in length from 100 fathoms to 400 fathoms; the shallowest end is from 35 to 40 meshes deep, but rapidly increases in width and is from 120 to 140 meshes deep at the other wing. The "bunt" or bag, in the central part of the net is about 50 fathoms long. These nets are usually hauled on the numerous sand bars which are a very noticeable feature of the river at low tide. Buildings are erected on piles on these sand flats, in which men and horses take refuge at high tide, when the bars are covered with water. Operations begin as soon as the beach or bar uncovers, so that the men can wade about. The net is placed in a large seine boat, with the shore end attached to a dory. At the signal the seine boat is headed offshore, while the dory heads toward the bar. As the seine boat circles around against the current, the net is paid out in the shape of a semi-circle. The dory men hurry to the bar with the shore end of the net, the idea being to get that in as soon as possible in order to prevent the escape of the salmon in that direction. As soon as this has been accomplished, the outer shore line is brought to the bar, when several horses are hitched to the line and begin to haul in the net, care being taken by the men to work it against the current as much as practicable, and to get it in as speedily as they can in order to prevent the escape of salmon either by jumping over the cork line or finding some outlet below the foot rope or lead line. Sand bars where seines operate are so low in the water that from a distance it appears that both men and animals are struggling in deep water. A haul of six tons in one net was the record of 1928 at Sand Island on the Columbia river.

### Diver Nets.

These are in use in the Columbia river, mainly throughout the middle and upper portions of the river. They vary from 100 to 200 fathoms in length and are used almost exclusively for chinook salmon. In construction they somewhat resemble a trammel net. Two nets are attached together side by side. The outer one, or the one toward the oncoming fish, has a larger mesh than the other, so that if the fish manages to pass through the first, it will be caught in the smaller meshes of the second.

### Traps or Pound Nets.

A trap is stationary and consists of webbing, or part webbing and part wire netting, held in place and position by driven piles. This piling usually is held together above water by a continuous line of wood stringers, also used to fasten webbing to or to walk on if necessary.

In building, the "lead" is first constructed. This runs at right angles or very nearly so, to the shore, and consists of a straight line of stakes, to which wire or net webbing is hung from top of high water, or a little higher, to bottom, making a straight, solid wall.

At a little distance inshore of the outer end of the lead begin what are called the "hearts." These are V-shaped and turned toward the lead, beginning at a distance of 30 to 40 feet on either side of same and running in the same general direction, the "big heart" or outer heart first, the inner heart, supplementing the first, being smaller, and the end of the outer heart leading into it. Some traps have only one heart. The narrow end of the inner heart leads into the "pot" and forms what is known as the "tunnel." The tunnel ends in a long and narrow opening, running up and down the long way, and is held in position by ropes and rods. Below this is what is known as the "apron" a sheet of web stretched from the bottom of the heart upward to the pot in order to lead the fish into the tunnel when swimming low in the water and to obviate the necessity of building the pot clear to the bottom, which would be expensive, as the pots of the traps are usually in quite deep water. If the trap is intended to catch the fish coming from only one direction, the lead generally runs to and is attached to one side of the entrance to the outer heart on the side opposite to that from which the fish are expected.

### Trolling.

The trollers use power boats, and four and sometimes six lines are used. One and sometimes two short poles are run out from each side of the boat (when two are used on a side one is shorter than the other), the butt being dropped into a chock. Two lines are generally trailed from the stern. At the end of each pole is a very short line with a small tin can attached. A few pebbles are in the can, and as the launch moves slowly through the water with all her lines set, the troller knows when he has a bite by the rattling of the pebbles in the can. Each of the lines attached to a pole is also connected with the boat by a short line from the side to a point on the line about 20 feet from the tip of the latter. When a fish is hooked, the fisherman merely pulls in the line by means of the short piece and then hauls the fish in hand over hand.

## METHODS OF PREPARING SALMON

### Dressing.

A number of canneries still use the hand method of dressing the fish, and in such places the selection of the butchering or dressing gangs is of prime importance. Two men constitute a "butcher's gang," and the number of these gangs is dependent upon the output of the plant. Boys place the fish, with the head out, upon the cutting tables. One man cuts off the heads, and is followed by another who removes the fins, tails and viscera. The offal is thrown into a chute, whence it passes into a scow moored underneath, while the dressed fish is transferred to a tank of water, where it receives a second washing, scraping and final brushing with a whisklike broom, which removes any offal, blood, and scales that were overlooked in the first washing, after which it is removed to large bins on either side of the cutting machine.

The other method of cutting the salmon is by a machine. This is generally a large wooden cylindrical carrier, elliptical in shape, thus having a larger carrying capacity.

### Salting.

Every can of salmon is seasoned with one-fourth of an ounce of salt, which, to insure uniformity, is added by mechanical means.

### Filling the Cans.

Some canneries now use filling machines for all sizes of cans, and though a few, more particularly those packing flat and odd-sized cans, still fill by hand. Flat and oval cans carrying the highest grade salmon are packed by hand. Hand packing is done by women wearing white canvas gloves.

The filling machine consists of a chute with a belt to which are attached wire racks about four inches apart, set at an angle to prevent the salt from spilling out, into which the salted cans are fed from the floor above and pass into the machine. At the same time the divided sections of salmon pass down another chute into the mouth of what looks like a hand coffee mill. They pass through here down a smaller chute and are forced by two dogs into a receptacle through which the plunger, or filler, passes. Here the plunger comes opposite the open mouth of the empty can, which when it reaches this point is caught by a clasp or hook and held in front of the plunger, which is immediately thrust forward through a chamber filled with salmon, cutting the fish longitudinally and at the same time filling the can. The next movement forces the can out upon a table. When running at full speed, one of these machines will fill about 80 cans a minute.

In the hand method the fillers stand on each side of a long table with a trough running down the middle from end to end. This is filled with the cut pieces of salmon and the fillers, usually women and children, put large pieces into the cans at first and then smaller pieces to occupy the vacant spaces.

From the weighing machine the cans pass to the clinching machine, which attaches the top of the can loosely to the body in such a way that it allows the air in the can to escape, yet prevents the fish from coming in direct contact with the steam of the exhaust box. Also the water resulting from the condensation of steam, which accumulates in the exhaust box, is kept from entering the can and thus bleaching the flesh. In many plants the cans are washed by jets of water or steam directed against them in a closed box as they pass from the clincher to the exhaust box.

The cans then pass into a steam exhauster, consisting in one type of a box about 30 feet in length, in which are three endless-chain belts running side by side. Under and over each belt are steam coils, and under each of the lower coils are single pipes, which through small holes throw jets of live steam upon the coils, creating an intense heat. The cans pass along the first belt, are then transferred to the second belt, on which they return to the entrance of the box, whence they pass to the third belt, and continuing along this to the end pass out to the double seamer, the whole operation occupying from 5 to 15 minutes, preferably 15.

### Cement Used to Seal Tops.

Leaving the exhauster the cans pass to the double seamer which fastens the cover on tightly with a double seam or crimp. No solder is used in attaching the top on the can, the curled flanges of the cover being coated around the outer edge with cement or other sealing fluid to take its place.

### Cooking.

The processing time varies in each district and sometimes for each species. One-pound tall reds, cohos, chums and pinks are generally cooked from 90 to 120 minutes, at 12 to 18 pounds pressure and at a temperature of 242 to 248 degrees. One-pound flats and half-pound cans are generally cooked about 10 minutes less time. Owing to their larger bones, king salmon and steelhead trout are generally cooked from 10 to 20 minutes longer than the other species.

### Boxing or Casing.

A case of salmon generally contains 48 one-pound cans or their equivalent; i. e., 24 two-pound cans or 95 half-pound cans. Some canneries pack their half-pound cans in cases of 48. These cases are usually made of wood and cost from 9 to 11 cents each knocked down.

Other methods of preparing salmon for the market are: Smoked salmon, mild curing, pickling, dry salting, smoking and freezing.

### Utilizing Salmon Eggs and Melt.

In former times immense quantities of salmon eggs were thrown away in the fisheries of the west coast but in recent years the eggs are sold to salmon egg packers. The canned eggs are used for fish bait. Two salmon egg packers are successfully operating in the Astoria district.

### Preserving the Industry.

Both salmon packers and fishermen are vitally concerned in preserving the annual run of salmon. They have brought about the present closed periods for escapement. Fishermen cease their efforts on Saturday nights at sundown and do not fish again till Sunday night at sundown. Both fishermen and packers constantly seek legislation against the pollution of streams, the establishment of power dams and against open irrigation ditches and inasmuch as fishing is Oregon's third largest industry, the packers and fishermen find sympathetic cooperation with the entire state in their efforts to insure its perpetuation.

### Salmon Hatcheries.

Two fish hatcheries are within a few moments ride of Astoria and here may be seen the salmon in all stages of development. The success of propagation as a means of perpetuating the industry has been indisputably proven. The salmon is now kept until it is several inches in length and able to cope with its natural enemies. The hundreds of thousands of small salmon released periodically by state hatcheries are made possible through a poundage tax contributed by fishermen to aid the state in its work.

### Marking Salmon.

A number of Pacific coast people have been marking salmon fry in order to find out the age at which they return to spawn, the rate of growth, etc. Scattered through the reports of the various state fish commissions, and occasionally in the reports of the United States Bureau of Fisheries, are to be found detailed reports of such markings and the sometimes remarkable results attained, apparently at varying periods subsequent for the marking.

### Perpetual Wealth.

When the loggers and lumbermen complete their devastating attack upon the timbered hills of the Northwest they leave only barren areas with miles of charred stumps and logs to discourage the potential farmers or settlers. With the salmon industry, however, the wealth of from seven to eight million dollars per year is conferred upon the commonwealth and following the years of fishing, we find that the salmon are still with us in even greater numbers than ever before.